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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

VARTANIAN, HARRY

ART UNIT

PAPER NUMBER

2634

3

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,952

Applicant(s)

HELFENSTEIN ET AL.

Examiner

Harry Vartanian

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 and 17-28 is/are allowed.
- 6) ☒ Claim(s) 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10 is rejected under 35 U.S.C. 102(e) as being anticipated by Pett(United States Patent# 6,314,181). Pett meets the following limitations of the Claim:

means for matching the effective impedance of a transmission line as seen at the analog front end in the absence of transmission line irregularities; and **Pett (Column 4, Lines 39-50)**

means for adaptively compensating for at least one bridged tap induced frequency notch in the transfer function identifying the analog front end. **Pett Abstract; fig 7 for transfer function**

Regarding the first limitation "receiving a duplex signal transmission", the applicant admits that as prior art on Pg 3, Lines 14-19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

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ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 11-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pett(United States Patent# 6,314,181) in view of Thiele (United States Patent# 6,298,046). Regarding Claims 11-12, Pett meets all the limitations of Claim except disclosing the use of a hybrid circuit in his bridge tap canceller circuit for DSL.

However, Thiele meets the limitations of the Claims in the Abstract and fig 16 wherein he states the use of a hybrid circuit in a balancing circuit for DSL. Therefor it would have been prima facie obvious to use a hybrid circuit for impedance matching in a DSL network. A motivation to combine is stated by the applicant on pg 2, lines 23-28 wherein he admits that hybrid circuits are commonly used to "balance" networks.

Regarding Claim 14, Thiele meets the following limitations of the claim:

wherein the fixed portion of the hybrid comprises a passive network of discrete devices. **(Column 4, lines 56-57)**

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4. Claim 13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pett(United States Patent# 6,314,181) in view of Sharpe et al(United States Patent# 4,539,566). Regarding Claim 13, Pett meets all the limitations of Claim except disclosing the use of a biquad and summer circuits.

However, Sharpe et al meets the following limitations of the Claim

means for adaptively compensating comprises a biquad and a summer. (Column 5, lines 23-38)

Therefor it would have been prima facie obvious to use a biquad circuit and summer in an impedance matching circuit. A motivation to combine is disclosed by Orchard et al wherein he states:

"Biquad filters have the **advantages of low cost** and **standardized packaging and manufacturing**. They can be designed to be relatively independent of source and load impedances, and they can easily incorporate gain or loss into the filter. They are also favored by designers who do not have access to computer programs for designing lossless ladder filters and are therefore precluded from using the simulation approach, except in the special case of a catalogued design." (Column 1, lines 35-44)

Regarding Claim 15, Sharpe et al meets the following limitations of the claim:

wherein the biquad and a summer comprise a plurality of controllably selected circuit elements having various fixed impedances. **fig 4a; (Column 5, lines 23-38)**

Regarding Claim 16, Pett et al meets the following limitations of the claim:

wherein the plurality of controllably selected circuit elements comprise elements selected from the group consisting of integrated circuit resistors, capacitors, and transconductors. **fig 5 and 6**

Allowable Subject Matter

1. Claims are 1-9 are allowed. The following is an examiner's statement of reasons for allowance: the following limitation in Claim 1 was found to be the most novel aspect,

mathematically combines weighted signal components with **a duplex signal** to recover a remotely generated receive signal in **a single operation** at a hybrid amplifier.

Mukherjee(United States Patent# 6,226,322) meets many of the functional specifications of Claim 1, however the specific operation of the hybrid circuit is not met.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany

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the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. Claims are 17-28 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 10:00-6:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian
Examiner
Art Unit 2634

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